

# Chapter 6

## Creativity, Digitality, and Teacher Professional Development: Unifying Theory, Research, and Practice

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### ABSTRACT

*This article describes the development of a trans-disciplinary framework for creative teaching using technology. In recent years, the authors of this paper (and collaborators) have sought to better understand the role of creativity in educational technology. Our approach seeks to inform theory, research, and practice. In this piece we step back to provide a big-picture view of the process of developing a theoretical framework for creative, transformational teaching with digital technology. We describe the development of our ideas over time, through research projects focused on highly creative teachers and their practices. We describe how we have applied these ideas in teacher education courses devoted to creativity and technology, and developed rubrics for evaluating creative products. At a meta-level we aim to provide a rich example of the reciprocal nature of theory, research, and practice in educational technology. Through this we hope to provide one example of how such a theory/research/practice development process works, with the goal of informing future work of this type.*

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## INTRODUCTION

*You can't pursue any kind of inquiry without a relatively clear framework that's directing your search and helping you choose what's significant and what isn't...If you don't have some sort of a framework for what matters — always, of course, with the proviso that you're willing to question it if it seems to be going in the wrong direction — if you don't have that, exploring the internet is just picking out the random factoids that don't mean anything...You have to know how to evaluate, interpret, and understand...The person who wins the Nobel Prize is not the person who read the most journal articles and took the most notes on them. It's the person who knew what to look for. And cultivating that capacity to seek what's significant, always willing to question whether you're on the right track — that's what education is going to be about, whether it's using computers and the Internet, or pencil and paper, or books. Noam Chomsky*

Theoretical frameworks play a critical role in the development of any field. In fact, it has been argued that the explicit use of theory is essential for the development of scientific understanding of a domain. This is of particular importance for research in fields such as educational technology, where the broad generalizations of theory have to work with the intricate realities of practice – both of which lie within a broader context of a rapidly changing technological landscape.

The challenges are obvious. Scholars seeking to develop theory, conduct research in order to develop abstract generalizations. They do so by finding patterns of causation and explanation from the complexities of the continually evolving “wicked problems” (Koehler & Mishra, 2008; Rittel, 1972; Rittel & Weber, 1973) of teaching with technology. Practitioners in the field, on the other hand, focus on the here and now, and see theory as often being disconnected from their daily lives as professionals. Thus, if theory or research in educational technology is to be of use to the practitioners, it must manage to both capture the richness of the lived experience of the educator, and identify broad themes and perspectives that work across cases. This implies that theory generation in fields such as educational technology must develop in a transactional relationship between research and practice, where each is valued for what it has to offer to the final theory or framework being developed.

How exactly such a transactional relationship works, though, is harder to describe. In our experience, specifically through the development of the TPACK framework, this is a complex and zigzag process, which rarely if ever matches the deductive *scientific method* often seen in textbooks. Practice, research and theory-development often occur in parallel, in a dialectic relationship, or in spirals of increasing complexity. This is why it becomes important that we have rich case studies of this process. Over the past few years we (the authors of this chapter) have been involved in just such a rich series of design experiments, to better understand the role and nature of creativity in teaching and learning specifically using digital tools. We have written and presented our work in a variety of venues and contexts: as theory, practice and research (Henriksen & Mishra, 2013; Henriksen, Mishra, & The Deep-Play Research Group, 2014; Mishra, Koehler, & Henriksen, 2011; Mishra, & The Deep-Play Research Group, 2012; Mishra, Henriksen, & The Deep-Play Research Group, 2012; Mishra, Henriksen & The Deep-Play Research Group, 2013).

Too often, research in educational technology has been characterized as being a-theoretical in nature, merely providing descriptions of phenomena—represented usually by descriptive case studies of interesting uses of technology for pedagogical purposes. A general dissatisfaction with this approach has led to a push for making educational research more scientific. This has led to the development of certain criteria by which to judge educational research. Either explicitly or implicitly these criteria include a cluster of

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